AD-A037 936 ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
03702A HONEST JOHN MISSILE NUMBER 1548, ROUND NUMBER 654 AML (1--ETC(U)
NOV 76

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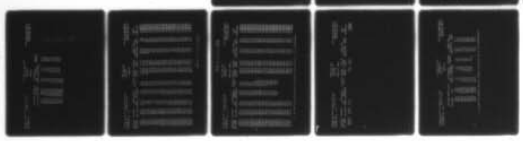

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DR-931
November 1976
AD

METEOROLOGICAL DATA REPORT

03702A HONEST JOHN
MISSILE NO. 1548, ROUND NO. 654 AML
(15 November 1976)

BY

WSMR METEOROLOGICAL TEAM

DDC
RECEIVED
APR 8 1977
A

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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1. REPORT NUMBER: DR-931	2. GOVT ACCESSION NO.
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4. TITLE (and Subtitle): 03702A HONEST JOHN MISSILE NO. 1548, ROUND NO. 654 AML (15 November 1976).	5. TYPE OF REPORT & PERIOD COVERED
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1. Ballistics
2. Meteorology
3. Wind

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of 03702A Honest John, Missile Number 1548, Round Number 654 AML, are presented in tabular form.

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CONTENTS

INTRODUCTION

03702A Honest John, Missile Number 1548, Round Number 654 AML, was launched from CP-7, White Sands Missile Range (WSMR), New Mexico, at 1400 HRS MST, 15 November 1976. The scheduled launch time was 1400 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

ELEVATION	4,694.0	FEET/MSL
PRESSURE	855.5	MBS
TEMPERATURE	11.6	°C
RELATIVE HUMIDITY	38	%
DEW POINT	-2.2	°C
DENSITY	1,042.0	GM/M^3
WIND SPEED	08	MPH
WIND DIRECTION	160	DEGREES
CLOUD COVER	6	Cu

TABLE I. SURFACE OBSERVATIONS TAKEN AT CP-7, 1400 HRS MST/15 NOVEMBER 1976.

ELEVATION	4,941.24	FEET/MSL
PRESSURE	847.7	MBS
TEMPERATURE	11.2	°C
RELATIVE HUMIDITY	39	%
DEW POINT	-2.1	°C
DENSITY	1,034.0	GM/M^3
WIND SPEED	013	MPH
WIND DIRECTION	140	DEGREES
CLOUD COVER	.2	Cu

TABLE II. SURFACE OBSERVATIONS TAKEN AT STALLION SITE, 1400 HRS MST/15 NOVEMBER 1976.

T-TIME (MIN-SEC)	SPEED (MPH	DIR DEG	T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG	T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG
-5.00	12.0	120	-0 9.5	17.0	151	-0 0.50	11.0	151
-4.30	12.0	112	-0 9.0		150	-0 0.25	14.0	151
-4.00	14.0	123	-0 8.5			0 0.00	14.0	151
-3.30	15.0	112	-0 8.0			+0 0.25	15.0	152
-3.00	17.0	108	-0 7.5	17.0		+0 0.50		152
-2.30	16.0	117	-0 7.0	16.0		+0 0.75		152
-2.00	17.0	099	-0 6.5	16.0	150	+0 1.00		152
-1.45	12.0	132	-0 6.0	16.0	153	+0 1.25		153
-1.30	14.0	117	-0 5.5	16.0	154	+0 1.50		153
-1.15	14.0	144	-0 5.0	15.0	153	+0 1.75		153
-0.60	13.0	143	-0 4.5	15.0	151	+0 2.00		153
-0.55	15.0	155	-0 4.0	11.0	152	+0 2.25		155
-0.50	12.0	150	-0 3.5	10.0	153	+0 2.50		
-0.45	17.0	163	-0 3.0	9.0	155	+0 2.75		
-0.40	16.0	153	-0 2.5	8.0		+0 3.00		
-0.35	16.0	156	-0 2.0	7.0		+0 3.25		
-0.30	18.0	156	-0 1.75	7.0		+0 3.50		
-0.25	18.0	154	-0 1.50	7.0		+0 3.75		
-2.20	18.0	158	-0 1.25	8.0		+0 4.00	15.0	
-0.15	17.0	153	-0 1.00	10.0	155	+0 4.25	16.0	
-0.10	17.0	155	-0 0.75	10.0	151	+0 4.50	16.0	155

TABLE III. ANEMOMETER-MEASURED WIND SPEED AND DIRECTION, POLE NO. 1 03702A HONEST JOHN, MISSILE NO. 1548, ROUND NO. 654 AML LAUNCHED FROM CP-7, 1400 MST/15 NOVEMBER 1976

WSTM COORDINATES: X = 406,477 Y = 693,532

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 168.5°.

T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG
+0 4.75	16.0	155
+0 5.00		153
+0 5.25		152
+0 5.50		152
+0 5.75		152
+0 6.00		152
+0 6.25		153
+0 6.50	16.0	153
+0 6.75	15.0	155
+0 7.00		
+0 7.25		
+0 7.50		
+0 7.75		
+0 8.00		
+0 8.25		
+0 8.50		
+0 8.75		
+0 9.00		155
+0 9.25		154
+0 9.50		154
+0 9.75	15.0	152

T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG
+0 10.00	15.0	153
+0 10.50	15.0	155
+0 11.00	16.0	155
+0 11.50	16.0	155
+0 12.00	17.0	156
+0 12.50	17.0	154
+0 13.00	18.0	153
+0 13.50	19.0	152
+0 14.00	20.0	152
+0 14.50		153
+0 15.00		154
+0 15.50		153
+0 16.00		151
+0 16.50		151
+0 17.00		151
+0 17.50		154
+0 18.00		156
+0 18.50		158
+0 19.00		156
+0 19.50		150
+0 20.00	20.0	147

T-TIME (MIN-SEC)	SPEED (MPH)	DIR DEG
+0 20.50	20.0	150
+0 21.00	20.0	153
+0 21.50	19.0	153
+0 22.00		151
+0 22.50		152
+0 23.00		148
+0 23.50	19.0	142
+0 24.00	20.0	141
+0 24.50		146
+0 25.00		147
+0 25.50		147
+0 26.00		147
+0 26.50		148
+0 27.00		
+0 27.50		
+0 28.00		
+0 28.50	20.0	
+0 29.00	19.0	148
+0 29.50	19.0	146
+0 30.00	19.0	146

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 168.5°.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (KTS)
SUR	151.5	12.0
500	161.5	7.0
1000	183.5	6.0
1500	243.5	10.0
2000	182.5	14.0
2500	198.5	11.5
3000	193.5	12.0
3500	207.5	13.0
4000	215.5	8.5
4500	218.5	10.5
5000	225.5	12.0
5500	241.5	12.0
6000	234.5	12.0
6500	231.5	14.0
7000	231.5	16.0
7500	233.5	15.0
8000	232.5	12.5

TABLE IV. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM CP-17, AT 1330 MST/15 NOVEMBER 1976
03702A HONEST JOHN, MISSILE NO. 1548, ROUND NO. 654 AML

PIBAL RELEASE POINT WSTM COORDINATES:

X = 413,576.24 Y = 665,015.33 Z = 4,746.53

APPROXIMATELY: 7 1/2 MILES SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 168.5°.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	140	13.0
100	147	
200	153	
300	160	
400	167	13.0
500	174	10.0
600	180	10.0
700	187	10.0
800	183	13.0
900	176	
1000	178	
1100	180	
1200	182	13.0
1300	183	14.0
1400	185	14.0
1500	186	14.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1600	187	15.0
1700	188	16.0
1800	189	16.0
1900	191	16.0
2000	195	15.0
2100	199	15.0
2200	202	14.0
2300	205	14.0
2400	208	14.0
2500	211	14.0
2600	214	13.0
2700	217	12.0
2800	220	12.0
2900	220	13.0
3000	218	13.0

TABLE V. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM CP-7, AT 1359 MST/15 NOVEMBER 1976
03702A HONEST JOHN, MISSILE NO. 1548, ROUND NO. 654 AML

PIBAL RELEASE POINT WSTM COORDINATES:

X = 406,122.94 Y = 693,918.11 Z = 4,844.64

APPROXIMATELY: 100 YARDS NORTHEAST OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 168.5°.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	160	8.0
500	140	15.0
1000	155	13.0
1500	160	16.0
2000	170	11.0
2500	180	13.0
3000	190	16.0
3500	210	18.0
4000	220	19.0
4500	230	20.0
5000	220	17.0
5500	200	16.0
6000	210	15.0

TABLE VI. PILOT-BALLOON-MEASURED WIND DATA, RELEASE NO. 1
RELEASED FROM AFSWC, AT 1415 MST/15 NOVEMBER 1976
03702A HONEST JOHN, MISSILE NO. 1548, ROUND NO. 654 AML

PIBAL RELEASE POINT WSTM COORDINATES:

X = 418,568.33 Y = 644,753.98 Z = 4,701.76

APPROXIMATELY: 10 MILES SOUTH SOUTHEAST OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TO THE FIRING AZIMUTH 168.5°.

STATION ALTITUDE 4940.00 FEET MSL
15 NOV. 75 1400 HRS MST
ASCENSION NO. 271

SIGNIFICANT LEVEL DATA
32CD04C271
STALLION

WSTM SITE COORDINATES
403783.00 FEET E
7C14C2.0C FEET N

TABLE VII

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
947.4	4940.0	11.2	-1.5	41.0
835.0	5342.1	8.4	-3.1	44.0
783.8	7047.4	3.2	-4.3	58.0
700.0	10010.1	-5.1	-7.4	84.0
689.6	10434.2	-5.3	-8.5	78.0
642.8	12196.7	-9.5	-15.8	60.0
600.2	13922.4	-14.3	-20.0	62.0
587.2	14467.8	-14.8	-31.2	23.0
558.2	15726.4	-15.3	-35.3	16.0
500.0	18425.2	-21.9	-40.8	10.0
400.0	23661.4	-34.3	-48.9	21.0
300.0	30137.3	-46.9		
225.4	36356.4	-52.9		

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UPPER AIR DATA

STATION ALTITUDE 4940.00 FEET MSL
15 NOV. 76 1400 HRS MST
ASCENSION NO. 271

320004C271
STALLION

WSTM SITE COORDINATES
403783.00 FEET E
701403.00 FEET N

TABLE VIII

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4940.0	847.4	11.2	-1.5	41.0	1035.6	657.7	330.0	8.5	1.000256
5000.0	845.5	10.8	-1.8	41.4	1034.9	657.2	330.6	9.0	1.000256
5500.0	830.1	7.9	-3.2	45.3	1028.6	653.9	335.5	9.4	1.000252
6000.0	814.8	6.4	-3.4	49.4	1013.2	652.1	339.9	10.0	1.000249
6500.0	799.8	4.9	-3.8	53.5	1000.0	650.3	343.8	10.5	1.000245
7000.0	785.1	3.3	-4.2	57.6	987.0	648.5	347.3	11.1	1.000242
7500.0	770.7	1.9	-4.6	62.0	973.4	646.8	3.6	10.4	1.000239
8000.0	755.7	.5	-5.0	66.4	960.0	645.2	21.7	10.4	1.000235
8500.0	741.5	-.9	-5.5	70.8	946.7	643.5	37.5	10.5	1.000232
9000.0	727.5	-2.3	-6.1	75.1	933.7	641.8	51.0	12.1	1.000228
9500.0	713.7	-3.7	-6.7	79.5	920.9	640.2	55.8	12.0	1.000224
10000.0	700.3	-5.1	-7.4	83.9	908.3	638.5	60.4	11.8	1.000221
10500.0	686.8	-6.5	-8.8	77.3	892.3	636.0	52.3	12.6	1.000215
11000.0	673.6	-6.6	-10.8	72.2	879.1	636.5	41.5	14.2	1.000210
11500.0	660.5	-7.8	-12.0	67.1	866.2	635.0	30.6	15.1	1.000205
12000.0	647.8	-9.0	-14.9	62.0	853.4	633.5	18.3	15.7	1.000200
12500.0	635.1	-10.3	-16.5	60.4	841.0	631.9	10.5	16.1	1.000197
13000.0	622.6	-11.7	-17.7	58.9	828.9	630.2	6.3	15.9	1.000193
13500.0	610.4	-13.1	-18.9	57.5	817.0	628.5	6.7	16.4	1.000190
14000.0	598.3	-14.4	-21.1	56.5	804.9	626.9	9.7	17.4	1.000186
14500.0	586.4	-14.8	-21.3	22.8	790.8	626.3	12.1	17.5	1.000179
15000.0	574.8	-15.0	-32.8	20.0	775.5	626.0	14.4	17.3	1.000175
15500.0	563.3	-15.2	-34.5	17.3	760.6	625.7	18.4	17.2	1.000171
16000.0	552.0	-16.0	-35.9	16.0	747.0	624.8	22.8	17.2	1.000168
16500.0	540.9	-17.2	-36.9	16.0	736.0	623.3	28.9	17.9	1.000165
17000.0	529.9	-18.4	-37.9	16.0	724.8	621.8	33.6	18.6	1.000163
17500.0	519.2	-19.6	-38.9	16.0	713.4	620.3	30.8	18.2	1.000160
18000.0	508.8	-20.9	-40.0	16.0	702.4	618.8	27.4	17.8	1.000158
18500.0	498.4	-22.1	-40.9	16.1	691.5	617.3	21.3	17.5	1.000155
19000.0	488.0	-23.3	-41.6	16.5	680.2	615.9	16.6	17.9	1.000152

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UPPER AIR DATA

STATION ALTITUDE 4940.00 FEET MSL
15 NOV. 76 1400 HRS MST
ASCENSION NO. 271

32C004C271
STALLION

WSTM SITE COORDINATES
403783.00 FEET E
7C14C3.00 FEET N

TABLE VIII (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
19500.0	477.7	-24.4	-42.4	17.0	669.1	614.4	17.3	19.6	1.000150
20000.0	467.7	-25.6	-43.1	17.5	658.2	613.0	18.6	21.2	1.000147
20500.0	457.9	-26.8	-43.8	18.0	647.4	611.5	21.9	22.4	1.000145
21000.0	448.3	-28.0	-44.6	18.4	636.9	610.0	24.0	23.7	1.000143
21500.0	438.9	-29.1	-45.4	18.9	626.6	608.6	23.9	24.7	1.000140
22000.0	429.7	-30.3	-46.2	19.4	616.4	607.1	21.7	25.6	1.000138
22500.0	420.7	-31.5	-46.9	19.9	606.4	605.6	17.9	27.0	1.000136
23000.0	411.9	-32.7	-47.7	20.3	596.6	604.2	17.3	27.2	1.000133
23500.0	403.3	-33.8	-48.6	20.8	587.0	602.7	17.7	26.9	1.000131
24000.0	394.5	-34.9	-49.8	20.0**	576.8	601.3	19.4	27.4	1.000129
24500.0	385.8	-35.9	-51.4	18.4**	566.4	600.1	21.0	28.3	1.000127
25000.0	377.3	-36.9	-53.0	16.7**	556.2	598.9	22.2	30.9	1.000124
25500.0	369.0	-37.8	-54.6	15.1**	546.2	597.6	23.1	33.4	1.000122
26000.0	360.8	-38.8	-56.4	13.5**	536.4	596.4	23.5	36.0	1.000120
26500.0	352.9	-39.8	-58.2	11.8**	526.8	595.1	23.7	38.4	1.000117
27000.0	345.1	-40.8	-60.1	10.2**	517.3	593.9	23.6	40.0	1.000115
27500.0	337.5	-41.7	-62.2	8.6**	508.0	592.6	23.2	41.5	1.000113
28000.0	330.0	-42.7	-64.6	7.0**	498.9	591.4	22.5	42.5	1.000111
28500.0	322.7	-43.7	-67.2	5.3**	490.0	590.1	22.1	43.5	1.000109
29000.0	315.6	-44.7	-70.5	3.7**	481.2	588.9	21.9	44.4	1.000107
29500.0	308.7	-45.7	-75.1	2.1**	472.6	587.6	21.1	43.7	1.000105
30000.0	301.8	-46.6	-85.0	.4**	464.2	586.3	19.7	41.4	1.000103
30500.0	295.0	-47.3			455.0	585.4	17.5	38.7	1.000101
31000.0	288.2	-47.9			445.7	584.7	14.4	35.6	1.000099
31500.0	281.6	-48.5			436.6	584.0	14.6	36.4	1.000097
32000.0	275.1	-49.0			427.7	583.2	14.9	37.2	1.000095
32500.0	268.8	-49.6			418.9	582.5	15.2	37.6	1.000093
33000.0	262.6	-50.2			410.4	581.7	15.1	34.0	1.000091
33500.0	256.6	-50.8			402.0	581.0	14.4	30.5	1.000090
34000.0	250.7	-51.3			393.8	580.2	12.1	27.5	1.000088

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4040.00 FEET MSL
15 NOV. 76 1400 HRS MST
ASCENSION NO. 271

UPPER AIR DATA
32000402?1
STALLION

WSTM SITE COORDINATES
403783.00 FEET E
7014?3.00 FEET N

TABLE VIII (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
34500.0	245.0	-51.9			785.7	579.5			1.000086
35000.0	239.3	-52.5			777.8	578.7			1.000084

STATION ALTITUDE 4940.00 FEET MSL
15 NOV. 76 1400 HRS MST
ASCENSION NO. 271

MANDATORY LEVELS
320004C271
STALLION

WSTM SITE COORDINATES
403783.00 FEET E
701403.00 FEET N

TABLE IX

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
800.0	6494.	4.9	-3.8	53.	343.8	10.5
750.0	8207.	-.0	-5.2	68.	28.5	10.5
700.0	10004.	-5.1	-7.4	84.	60.5	11.8
650.0	11905.	-8.8	-14.6	63.	20.3	15.5
600.0	13920.	-14.3	-20.1	61.	9.3	17.3
550.0	16078.	-16.2	-36.1	16.	23.8	17.3
500.0	18406.	-21.9	-40.8	16.	22.3	17.6
450.0	20921.	-27.8	-44.5	18.	24.0	23.6
400.0	23661.	-34.3	-48.9	21.	18.3	27.0
350.0	26689.	-40.1	-58.9	11.**	23.6	39.1
300.0	30091.	-46.9			19.3	40.8
250.0	34015.	-51.4			11.8	27.1

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.